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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,314	03/19/2004	Matthijs H. Keuper	LUM-03-06-09 US	7327

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EXAMINER	
DICKEY, THOMAS L	

ART UNIT	PAPER NUMBER
2826	

MAIL DATE	DELIVERY MODE
06/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/804,314	KEUPER ET AL.	
	Examiner	Art Unit	
	Thomas L. Dickey	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21,23-35 and 71-78* is/are pending in the application.

4a) Of the above claim(s) *8-17,25-31,35,77 and 78* is/are withdrawn from consideration.

5)☒ Claim(s) *23 and 24* is/are allowed.

6)☒ Claim(s) *1-7,18-21,23,32-34 and 71-76* is/are rejected.

7)☒ Claim(s) *34,75 and 76* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/14/2007 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

A. Claims 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by RODDY ET AL. (2003/0214633).

Roddy et al. discloses a system comprising a first light emitting diode 12bg configured to emit light that is at least 50% polarized along a first polarization orientation (noting that light that is "at least 50% polarized along a first polarization orientation," is up to

50% polarized along a second polarization orientation. A first light emitting diode emitting light that is 50% polarized in each of the orthogonal directions (50-50; evenly polarized; what has been called "randomly polarized," since the intensity of light measured through a polarization filter oriented in any random direction will still measure 50%) thus meets the claim; as does a first light emitting diode emitting light that measures 70%/30%; 90/10; 99/1. Furthermore, it is clear that in an accused or prior art device the claimed "first polarization orientation" may be oriented to suit one's fancy, in other words, if one orientation is less than 50% and fails to meet the claim, the other is more, and thus meets the claim) when forward biased; a second light emitting diode 12g configured to emit light that is at least 50% (and thus may be 50/50, or "randomly" polarized) polarized along a second polarization orientation when forward biased; a polarizing beamsplitter 87 (Roddy et al. use a dichroic mirror as the polarizing beamsplitter combining the b and bg light, although they say, paragraph 0073 that other devices, such as "McNeille prisms, wire-grid polarization beamsplitters, or other suitable devices" may be used) disposed in the path of the light having a first polarization orientation emitted by the first light emitting diode 12bg and light having a second polarization orientation (orthogonal to the first polarization orientation) emitted by the second light emitting diode 12g, wherein the polarizing beamsplitter 87 combines the light having a first polarization orientation and the light having a second polarization orientation; and wherein a microdisplay 20g-20bg disposed in a path of light emitted by the first light emitting di-

ode 12bg and the second light emitting diode 12g receives the light having a first polarization orientation and the light having a second polarization orientation after being combined by the polarizing beamsplitter 87. Holton 4,084,130 teaches us that since 1978 those familiar with the semiconductor art have considered it necessary, to produce light, for first 12bg and second 12g light emitting diodes to each include an epitaxial structure, such as (for an early example of the science proving this proposition) Holton's "GaAs EPITAXY," comprising an active region (such as Holton's active region 54) sandwiched between an n-type region (such as Holton's n-type region 57) and a p-type region (such as Holton's p-type region 55). Holton explains that this configuration is necessary so that electrons entering the active region from the n-type region (where electrons are plentiful) may "fall" into holes entering the active region from the p-type region, thereby emitting photons. Note figure 10a-b and column 11 lines 33-66 of Holton. Therefore the claimed "active region sandwiched between an n-type region and a p-type region, the active region configured to emit light when forward biased," are inherent to the first and second light emitting diodes disclosed by Roddy et al. See MPEP § 2112. Note figure 5 and paragraphs 0064-0073 of Roddy et al.

B. Claims 18-21,32, 33, and 71-74 are rejected under 35 U.S.C. 102(b) as being anticipated by WEINDORF ET AL. (2002/0140880).

With regard to claims 18-21,32, 33 Weindorf et al. discloses an apparatus comprising a light-emitting diode 126 (which will necessarily and thus inherently include an epitaxial

structure comprising an active region sandwiched between an n-type region and a p-type region, the active region configured to emit light when forward biased, see figure 10a-b and column 11 lines 33-66 of Holton 4,084,130); a non-absorbing wire grid polarizer 106 coupled to the active region, the non-absorbing wire grid polarizer 106 transmitting light having a desired polarization orientation and reflecting light that does not have the desired polarization orientation; a polarized microdisplay 104 disposed in a path of light transmitted by the non-absorbing wire grid polarizer 106; and a phosphor wavelength converting material means for randomizing 130 coupled to the active region and the non-absorbing wire grid polarizer 106, the phosphor wavelength converting material means for randomizing 130 positioned to receive light emitted from the active region and reflected from the non-absorbing wire grid polarizer 106, the phosphor wavelength converting material means for randomizing 130 at least partially randomizes the polarization state of the light; wherein the non-absorbing wire grid polarizer 106 and phosphor wavelength converting material means for randomizing 130 are configured to preserve the overall radiance of the light transmitted by the non-absorbing wire grid polarizer 106 with respect to the light emitted when the active region is forward biased.. Note figures 1 and 2 and paragraphs 0027-0032 of Weindorf et al.

With regard to claims 71-74 Weindorf et al. discloses an apparatus comprising a light-emitting diode 126; a non-absorbing wire grid polarizer 106 coupled to the light-emitting diode 126, the non-absorbing wire grid polarizer 106 transmitting light having a desired

polarization orientation and reflecting light that does not have the desired polarization orientation; a phosphor wavelength converting material randomizing element 130 coupled to the active region and the non-absorbing wire grid polarizer 106, the phosphor wavelength converting material randomizing element 130 positioned to receive light emitted from the light-emitting diode 126 and reflected from the non-absorbing wire grid polarizer 106, the phosphor wavelength converting material randomizing element 130 at least partially randomizes the polarization state of the light, wherein the non-absorbing wire grid polarizer 106 and phosphor wavelength converting material randomizing element 130 are configured to preserve the overall radiance of the light transmitted by the non-absorbing wire grid polarizer 106 with respect to the light emitted when the active region is forward biased; and a polarized microdisplay 104 disposed in a path of light transmitted by the non-absorbing wire grid polarizer 106. Note figures 1 and 2 and paragraphs 0027-0032 of Weindorf et al.

Allowable Subject Matter

3. Claims 23 and 24 are allowed over the references of record.

4. Claims 34, 75, and 76 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L. Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Sue A. Purvis, at 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Thomas L. Dickey/
Primary Examiner
Art Unit 2826